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General discussion and
future perspectives

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Chapter 7

In this thesis we present five studies concerning pregnancy and delivery after a previous cesarean. The rate of cesareans keeps on rising worldwide, meaning that more and more women are exposed to the short term risks of surgery and the long term comorbidities associated with a uterine scar.¹ The biggest contributor to this rising rate is the repeat cesarean after a previous one.² A way to put a halt to the rising cesarean rate is to reduce the rate of repeat cesareans by providing the option for trial of labor after a previous cesarean. A trial of labor has relatively good maternal and neonatal outcomes if it succeeds, but has increased risks for mother and child when it fails and an emergency cesarean is needed, as compared to planned repeat cesarean.³ Therefore, although absolute risks of adverse outcomes are small, trial of labor has higher relative rates of shortterm maternal and neonatal morbidity and mortality when compared to elective repeat cesarean.⁴ A recent economic evaluation showed trial of labor in the end is more cost effective, especially for those likely to have a successful trial of labor.⁵ Thus, key in the trial of labor versus elective repeat cesarean debate is the prediction of who will be successful in achieving vaginal birth.

To predict success chance of trial of labor after a cesarean in individual women, studies and guidelines focused on clinical risk factors associated with trial of labor.^{6,7} The aim of this thesis is to gain more insight in the prediction of trial of labor success chance by integrating clinical risk factors with aspects of human decision-making. Quantitative information on what the influence of patient characteristics is on trial of labor success chance provides an estimation of success chance of vaginal delivery, enabling woman to make an informed choice.^{6,8-12} Chapter 4 and 5 however, shed new light on the issue of predicting success chance, uncovering an important influencer of success that is not included in current clinical prediction models or guidelines: motivation of doctors as well as patients.

Motivation is an influencer of vaginal birth success chance

Because there is large variation in the success rates of trial of labor amongst women with comparable medical risk factors, we wondered how the clinical assessment on whether to advise to stop or to continue trial of labor is made.¹³ Moreover, since gynecologists decide when to perform repeat cesarean during trial of labor, their decisional process is one of the factors that might be confounding in studies aiming to measure influencers of success chance. In chapter 5, using a constructivist grounded theory method, we were able to establish a model that describes gynecologists' decision-making during trial of labor. The chance of a successful outcome of trial of labor is continuously weighed against the likelihood of adversities. Several forces act upon the decision-making process: aspects of progress of labor, gynecologists' personal stances regarding trial of labor, organizational affordances and a woman's motivation during the labor attempt. The latter one can be key in the decision to either continue with trial of labor or to proceed into repeat cesarean in situations where doubt has risen, but there is no absolute need to perform emergency cesarean. We know from chapter 4 of this thesis and from previous research on choosing mode of delivery after cesarean,¹⁴⁻¹⁶ that a variety of reasons exist for a woman to attempt trial of labor. Our qualitative data on what women want for their post-cesarean deliveries reveal the importance of different non-medical factors, such as the desire to have contact with the baby right after birth, a quick recovery, or the avoidance of unpredictability. Since patients' motivations act upon doctor's decision, it's not unthinkable that a woman's desire for giving birth vaginally influences gynecologists' assessment whether to proceed with the trial of labor when in doubt. Or the other way around, when a woman

decides to discontinue her vaginal birth attempt, her gynecologist might be convinced to proceed into cesarean even when there is no medical need to do so.

Both articles presented in chapter 4 and 5 show that the success chance of trial of labor does not only depend on quantitative factors, but also on complex social and psychological factors. To make decisions is a human action and it will differ per specific situation. We are not suggesting that these processes are erroneous, but we plead for transparency of these processes in antenatal counseling rather than to concentrate on numbers and figures as prediction models do.

Suggestions for clinical guidelines on antepartum counseling in pregnancies after cesarean

This thesis describes in chapter 2 and 3 that the supposed negative influence of a short interpregnancy interval and a premature previous cesarean could not be established in a large Dutch cohort. We propose that guidelines remove these factors as possibly decreasing success chance.^{6,12} Based on the findings in this thesis, we suggest a new text to incorporate in clinical guidelines in the paragraph on antepartum counseling to be as follows.

“Women with a previous cesarean without contra-indications for trial of labor in current pregnancy, should be counseled on their intended mode of delivery. They should be aware of the risks and benefits of trial of labor as well as elective repeat cesarean (*as presented in table 1 in the introduction of this thesis*), possible courses of both treatment options on the short term (ie. in current pregnancy and delivery) and on the long term (ie. for future pregnancies). Women should be explained that risk estimates derive from large cohort studies that might not be indicative for her specific situation and might be biased for the fact that numbers are not resulting from intention to treat analyses, but from studies based on the actual route of delivery. The health care provider should discuss that her trial of labor success chance is roughly 75%. The a priori success chance is influenced not only by a woman’s biological and demographic risk factors (such as body mass index, ethnicity, prior nonprogressive labor, any prior vaginal delivery, estimated fetal weight, diabetes mellitus, and hypertensive disorders).¹³ Also her personal stance and beliefs, the attending gynecologist and the hospital she gives birth in act upon the success chance of her trial of labor after cesarean. The obstetrician should inform him- or herself on the woman’s medical and social history and the reasons and course of the previous cesarean. A conversation which is based on trying to understand reasons for preferring one option over the other should follow next. Therefore, an exploration of a woman’s specific preferences is necessary. For example, not all women who need to make a decision on their intended mode of delivery are concerned with success chances and risks. An open discussion of a woman’s priorities is not only necessary to meet modern professional standards, but also to create realistic expectations for both the woman and her health care professionals.¹⁷ Since trial of labor success chance is dependent of a woman’s motivation, and women with a high success chance have the smallest risk of complications, motivation should be key in the counseling conversation.”

Future perspectives on antepartum counseling in pregnancies after cesarean

To meet our suggestions for shared decision-making in clinical practice, given the limited time a care professional has for consultation and counseling and the fact that patients often do not fully comprehend information provided during a counseling conversation,¹⁸ it could be useful to provide information through an online decision aid, most ideally being an interactive one,

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through which a woman can understand the risks and benefits of both options, and can express her preferences for her upcoming delivery.¹⁹ Research into the applicability and effectivity of decision aids to facilitate shared decision-making is needed. Moreover, future research needs to focus on the way in which women's preferences come to an existence. For example, they possibly arise at the moment the first cesarean is indicated, in the puerperium following the first cesarean or during the next pregnancy. We need more information on the extent to which women hold one or more perspectives, and whether or not perspectives are dependent of circumstances and characteristics, and might change over time.

Suggestions for clinical guidelines on care during trial of labor after cesarean

The current Dutch and American clinical guidelines on pregnancy and delivery after cesarean include a short section on intrapartum management, elaborating on factors that are possibly indicative of uterine rupture.^{6,12} Based on our findings in chapter 6, we suggest to add a section on operative vaginal delivery, noticing it should be considered as a difficult operative vaginal delivery and not just as one in a nulliparous second stage of labor. Chapter 5 of this thesis provides material for expanding the intrapartum management paragraph with the concept of gynecologists' decision-making during trial of labor after cesarean, making users aware of all factors that possibly built up to intrapartum decisions. Based on the findings in this thesis, we suggest to add the following text.

“Not only biomedical influences but also sociocultural factors play a significant role in medical decision-making. Qualitative research showed that during trial of labor after cesarean, gynecologists continually assess and re-assess chance of success versus chance of adversities. This assessment is related to and influenced by the patient, the current and previous delivery and the gynaecologist's own stance, while at the same time being subject to a socio-culturally influenced threshold that tacitly defines when to perform a cesarean.”

Future perspectives on care during trial of labor after cesarean

By adjusting the texts provided in clinical guidelines as suggested, the guideline could enable clinicians to explicitly reflect on their daily practices. Being aware of factors influencing decisions and to actively reflect on them can provide guidance in formulating initiatives for the improvement of antepartum and intrapartum care. For example, if a cesarean is performed due to suspicion of uterine rupture, the structured and explicit evaluation of the fact that a rupture was indeed present (or not) can be used to optimise the assessment that was made during the trial of labor. This may result in underlying assumptions and concepts being adjusted, unexplained variations in practice being reduced and possibly, in the end, a better antepartum estimation of trial of labor success chance being established.²⁰ For training of current and future gynecologists, midwives and other maternity care workers who are increasingly confronted with women pregnant after cesarean, we suggest to initiate and evaluate reflectivity meetings as a means to reduce emergency cesarean rates. Cases of women with successful and failed trial of labor, with (suspected) uterine rupture, or with elective repeat cesarean for a suspected low vaginal birth success chance could be discussed using the theory this thesis provides, for it may enhance clinicians' ability to explicitly reflect on crucial factors in decision-making. To evaluate the effectiveness of such meetings in a research setting would be the next step in ameliorating care for women pregnant after cesarean.

Needless to say, the actual solution to the problem of the rising cesarean rate and the challenge of delivery in a post-cesarean pregnancy, is to prevent the first cesarean. That requires a look

into the main reasons for the first cesareans.²² For one can imagine, the conceptual framework of gynecologists' decision-making presented in chapter 5, and the motivation of woman found in chapter 4, might be applicable to decision-making in pregnancies *after*, as well as *before* cesarean.

Strengths and limitations

The strength of this thesis is its relevance for daily obstetrical practice. As the main part of the research team consisted of doctors working in the field of obstetrics, the process of theoretical development, investigation and conclusions of every single chapter was conducted in the light of usefulness for daily practice. However, one can argue this might also be a limitation. To be on the inside looking inside might have impeded us to look into the phenomenon of birth after cesarean with an open mind. Therefore, we plead this thesis to be the stepping stone for those in sociocultural research who are interested in the field of clinical decision-making under uncertain circumstances and we invite them to further explore the decisional conflicts that are present in pregnancy and delivery after cesarean.

A second strength of this thesis is its combined qualitative and quantitative methods. The combination of methods to study a phenomenon, also known as triangulation, enabled us to improve the quality of our conclusions.²¹ However, we only investigated a few stakeholders in the birth after cesarean topic; individual gynaecologists, individual women pregnant after cesarean and individual clinical characteristics. The range of influencers is broader than this. For example, (clinical) midwives and residents, hospital policy makers, partners of these women, national guideline makers, moderators of internet fora and (inter)national research groups, all play a role in how pregnancy and delivery after cesarean are actually managed in modern obstetrical practice. So, for truly triangulating this topic a closer look into all of these stakeholders is required.

Conclusion

Key in the trial of labor versus elective repeat cesarean debate is the prediction of who will be successful in achieving vaginal birth. From this thesis, we've learned that not only medical risk factors, but also sociocultural processes influence trial of labor success chance. To counsel women only based on medical factors influencing risks and success chances, is to not completely inform them on the actual conduct of a trial of labor after cesarean. Transparency in the limitations of appointing risk factors based on cohort studies, and explaining human and organizational factors that act upon the decisions made during trial of labor, would be a more honest reflection of a trial of labor after cesarean. This honest reflection will enable women to make an informed choice that suits their preference and will enable health care professionals to evaluate the care they provide to women pregnant after a cesarean.

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